DIGITAL LEADERSHIP PRACTICES: A SOCIAL INTELLIGENCE PERSPECTIVE

Research Paper

Abstract

The digital transformation of the workplace impacts all involved individuals, including leaders, who have to balance institutionally implemented traditional organizational structures and new ways of working, enabled by digital platforms and (often) needed by their employees. Studies show that many leaders are still struggling to find their new individual leadership role and interaction style in the openness of the digital work environment. With this study, we want to contribute to a better understanding of actual digital leadership practices, i.e. how the digitization of the workplace changes leadership styles and approaches. Based on the theoretical lens of social intelligence, we identify five interwoven categories of digital leadership practices through a rigorous literature review and empirically refine them through a focus group as well as an illustrative case study: communicating, adapting, listening, understanding, and empathizing. Framing digital leadership through the lens of social intelligence allows us to emphasize the human perspective of this reconfiguration, which goes beyond 'rewiring' the work environment and acknowledges the fact that digital leaders need to learn socially intelligent behaviors.

Keywords: digital leadership, digital communication, social intelligence, practices, digital transformation

1 Introduction

The nature of work is constantly changing. Recently, an increasing part of work practices has been proclaimed to evolve from having a time and space localization (Barley and Kunda, 2001) to what can be called 'working anytime and anywhere' (e.g., Cascio and Shurygailo, 2003). The use of information and communication technologies (ICT) plays a central role in this transformation process (Yates and Maanen, 2001; Zammuto et al., 2007; Aral et al., 2013).

Whereas there are many beneficial use cases of virtual work, there are also many open questions when conventional working teams start using virtual environments (Zigurs 2003). This is especially true when it comes to leading others in a digital context. ICT increases transparency and fuels the reduction of communication hierarchies which requires an adaptive capacity on the side of the leaders (Bharadwaj et al., 2013). As leadership commitment has been found to be one of the most important determinants for the success of a change initiative like the adoption of ICT (Kotter, 1996), it is worth noting that many organizational leaders are still struggling to understand what this virtual work means for leadership (e.g. Kahai, 2013). Furthermore, leaders need to be prepared for the increasing openness of their digital work environment in the 'conversational firm' (Turco, 2016).

In this article, we approach this challenge from a social intelligence perspective. Leadership research has shown that social intelligence is an important enabler of effective leadership (Zaccaro et al., 1991). It can be defined as" a set of interpersonal competencies built (...) that inspire others to be effective" (Goleman and Boyatzis, 2008, p. 3). Some behavioral characteristics of a socially intelligent leader are the ability to empathize with employees and understand their motivation and needs as well as leading by articulating a compelling vision and building group pride (Goleman and Boyatzis, 2008). Recent studies show that leaders are often 'not born' with these behavioral characteristics, but can develop and exercise them (Kolb and Whishaw, 1998). Although social intelligence is strongly linked to performance and leaders can develop it by exercising a set of behaviors (Goleman and Boyatzis, 2008), no research to date addresses the role of social intelligence in digital leadership practices.

Against this backdrop, our research objective is identifying digital leadership practices from the perspective of social intelligence. Through a rigorous literature review, we identify recurring practices and associated challenges within digital leadership, compare these with behavioral characteristics of a socially intelligent leader, and integrate them into a tentative framework. Then we refine the framework based on empirical insights from actual practices (Peppard et al., 2014, Whittington, 2014) of leaders from 12 companies based on eight hours of recorded data of a focus group and an in-depth interview carried out over several meetings that we present as an illustrative case study.

Our study yields contributions to theory and practice. From a theoretical standpoint, we identify and discuss digital leadership practices from a social intelligence perspective, and synthesize them in a coherent framework. By doing so, we are able to illustrate the impacts of virtual work on leadership practices and the strategies that leaders apply, as well as the capabilities they need in order to respond to these new challenges (e.g. Baptista et al., 2017). Applying the lens of social intelligence helps us to put the human perspective in the centre of these efforts and to acknowledge that digital leaders need to learn socially intelligent behaviors. From a practical perspective, we discuss leadership challenges that are associated with implementing virtual work and show how leaders can develop towards better facilitation by employing social intelligence lenses in their practices.

Our paper structure follows our research design, which we introduce in more detail in the next section. Afterwards, we present the findings of the two major phases in the development of our research framework: the results of the inductive exploration phase, which leaves us with a tentative framework, in Section 3, and the results of the empirical refinement phase in Section 4. Next, we discuss the implications for theory and practice in more detail (Section 5) and conclude this paper with reflections on limitations and further work (Section 6).

2 Research Design

The framework suggested in this article was developed in an iterative refinement process that adopted a mixed methods approach. As outlined in Figure 1, it consists of an inductive exploration and an

empirical refinement phase. The inductive exploration phase involved an extensive literature review based on the guide discussed in vom Brocke et al. (2009) and a survey. The empirical refinement phase consisted of focus group and an illustrative case study.

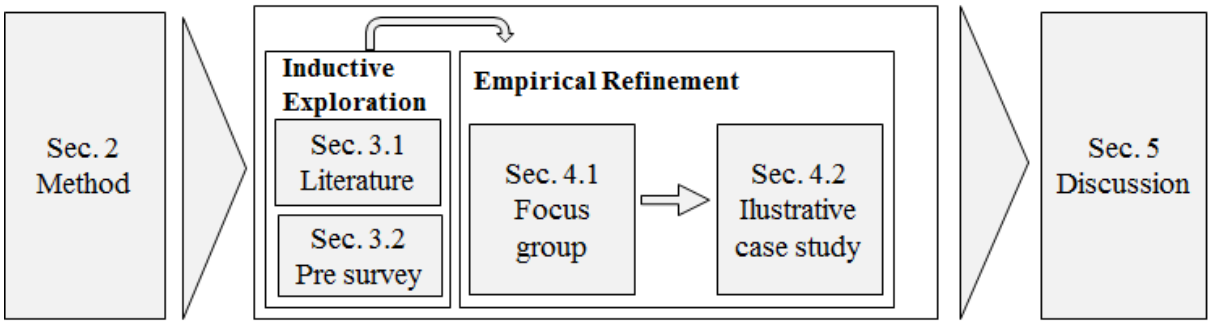

Figure 1. Research Design.

The initial literature review started on 29.6.2017 with a search on Google Scholar on digital leadership (which yielded 1.6 million results), digital work (3.6 million results), and digital communication (3.7 million results). The accessed files were from the first three pages of results. The articles that went into literature review were selected based on the abstract relevance to the topics of digital leadership, communication, and work, as well as based on backward and forward search. Furthermore, we inquired subject matter experts for literature suggestions on the same topics. The full content of the reviewed literature was coded using the approach outlined in Saldana (2009) with three cycles that are inspired by the grounded theory method. The first cycle of open coding involves in vivo and descriptive coding, supported by memo writing (Saldana, 2009).

The first step was to pre-code on paper, connecting authors and themes. In this phase it was easy to notice the nuances between different types of leadership styles (transformational, transactional, autocratic), and different challenges or opportunities related to digital leadership, such as a shift in hierarchies, or writing as an increasingly important skill for leaders. Next, the qualitative analysis software Atlas.ti was employed. The preliminary articles and codes were digitized, and more articles were added for coding based on forward and backward search. The first cycle of coding was based on the initial coding using the software. We read 30 articles with the purpose of identifying concepts, definitions, methods, challenges, opportunities, or frameworks related to digital leadership. We used in vivo coding - a short phrase from the actual language found in the text (Saldana, 2009) - as a way for the researcher to remain loyal to the author's language, without attaching a preconceived meaning to the concepts presented (e.g. "Management can be considered a form of information gathering"). Descriptive coding (Saldana, 2009) was used when a specific topic could be identified but was not explicitly used in the source (e.g. "Leadership definition"). The second cycle of coding was focused on bringing together concepts that were similar or identifying categories that these concepts would be part of. In this cycle of coding, pattern and focused coding methods were used to develop meta codes, and category labels to identify similarly coded data in order to organize the corpus of codes and to categorize coded data based on their similarity. Further, axial coding was used to describe category properties and subcategories and to define the relationship between categories and subcategories. After the first and second cycle of coding, Saldana (2009) suggests that one needs to rise above data. This was done by establishing the core codes of our research and by visualizing and cluster themes and concepts, ordering and reordering.

Next, to the literature review, a small-scale practitioner survey was launched with the intention to learn more about the practical challenges related to digital leadership as perceived by actual managers. Beyond the academic discussion, the ambition was to identify prospective gaps in the themes discovered so far or reinforce these. The survey yielded 22 responses from managers with expertise in the research domain, which were subjected to a keyword analysis and frequency count via the qualitative content analysis software Atlas.ti.

From the above two methods, a first tentative framework of digital leadership practices was derived, which was then refined in a second stage using a focus group discussion and case based on an in-depth interview.

The focus group discussion method (Flick, 2014) stimulated the participants to discuss collectively their views in a developing conversation. We invited a homogeneous group of 12 leaders from Danish companies, that met our required research criterion of experience with digital leadership in diverse contexts, to a one day meeting Moderation involved formal control of an agenda and topical steering by introducing a series of images and questions as discussion stimuli. We focused particularly on giving participants time to individually engage with the tentative framework, with a special focus on managerial activities that can be implemented in organizations. After individual reflection periods, participants were further paired to discuss together and give each other feedback. Lastly, the interviewees had a plenary discussion where they shared their views with the rest of the participants and inspired more leadership reflections for the others.

The refinement of the framework further involved a single case study with one of the participants of the focus group which took place after a one month period of time. The participation was voluntary, and the respondent was a leader working in a pharma company. The investigation into the case study involved a single in-depth interview, which followed the illustrative and appreciative interview approach outlined in Avital and Schultze (2011).

3 Inductive Exploration

3.1 Outcome of the literature review

Our literature review began with a first cycle of open coding which yielded a list of 301 individual diverse codes. Some emerging codes of the first cycle were in vivo codes, while others described the phenomena of different leadership styles, types, as well as the evolution of leadership practices. The second cycle of coding had the objective to aggregate concepts. Based on pattern and focused coding, meta codes and category labels such as “Behavior”, “Emotional intelligence”, or “Attentiveness” were derived during the second cycle of coding.

In the axial coding step, prefixes and colors were used to hint the category, e.g., “Effectiveness” was used as a prefix to show that the code belonged to the “Effectiveness” category. After the first and second cycle of coding, we visualized and clustered themes and concepts through ordering and reordering, yielding a conceptual network map that illustrates how codes emerged from the selected articles, the relations between the codes, as well as the emerged categories (Figure 2).

Given the large scope of the map, we only considered categories that pertain to the agency and role of leadership, while codes pertaining to definitions and the general phenomenon of digital leadership were excluded from our further analysis.

The resulting conceptual space was investigated and the categories were unpacked and scanned for conceptual similarities that would allow for concepts to be aggregated into a tentative framework, with an emphasis on Goleman and Boyatzis’ (2008) social intelligence dimensions.

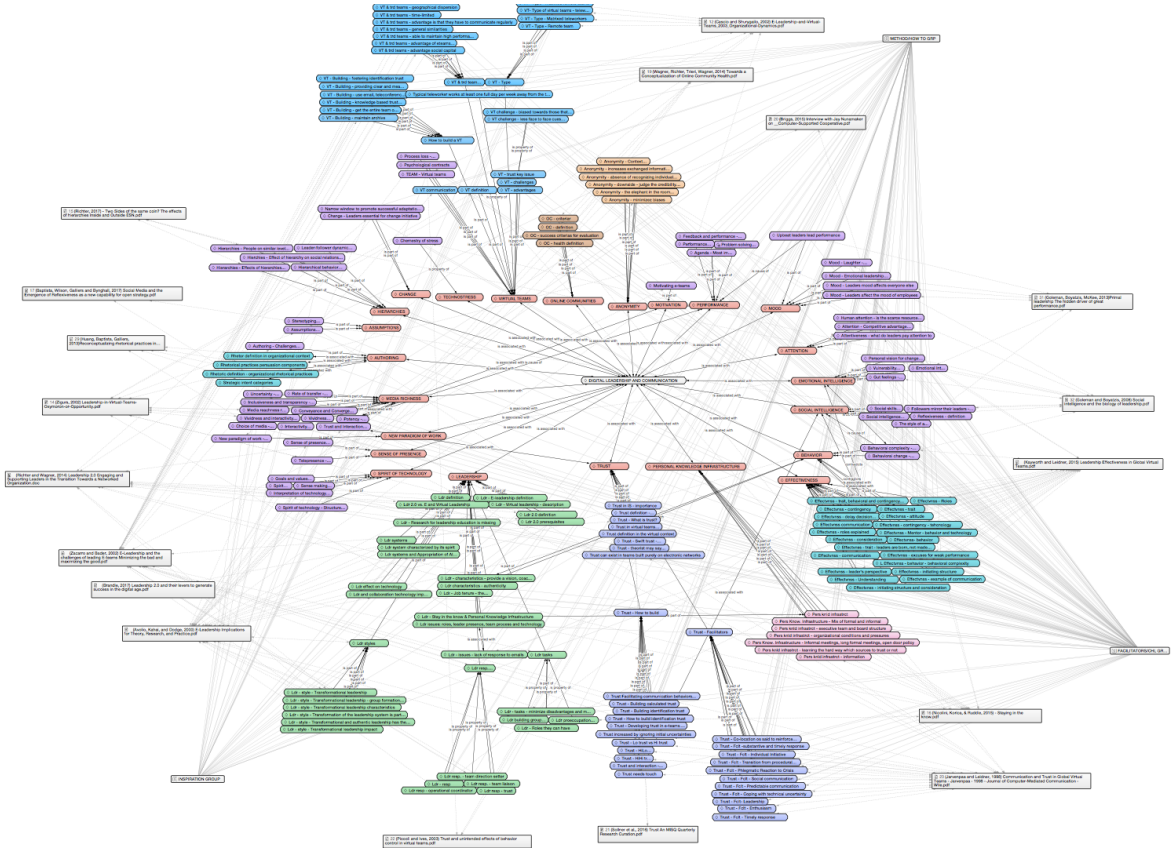

Figure 2. Conceptual Map after the literature review. Full version: http://bit.do/conceptualmap

3.2 Outcome of the survey

The small-scale exploratory survey served to identify practical challenges related to digital leadership as perceived by actual managers. While an extensive analysis of the results is not possible within the limited space of this paper, we note that the most recurring themes emerging from the responses to our open question "Please describe your challenges in relation to digital leadership and communication" were by far "Communicate" and "Understand", which were also identified in the literature review. Many other aspects mentioned in the survey correspond to the findings during literature coding, e.g., as "Effective", "Silos", "Influence", "Clear", "Relation", "People", and "Convincing". The survey results were hence largely in line with the literature review, but helped us to substantiate the initial core codes and to indicate the relative importance of the different concepts from the literature.

3.3 Synthesis: tentative framework

To apply our theoretical perspective of social intelligence to digital leadership, we assessed how the emerging leadership behaviors and responsibilities corresponded with the general social intelligence competencies proposed by Goleman and Boyatzis (2008). The alignment of the two fields was approached by taking each of the dimensions of social intelligence and carefully comparing it in terms of meaning with the key concepts from the literature review and survey. If the concepts related to each other in a meaningful way, a joint theme was conceptualized. In this way, the social intelligence theory served as a filter that helped to narrow the focus and emphasize the social intelligence dimension in our framework. At the end, the remaining codes were checked for conceptual similarity - for example "personal knowledge infrastructure" could be added under the category Listen, as the concept behind it is closely related to the leaders' ability to listen for input from all employees in the form of face to face conversations, as well as monitoring enterprise social networks (Niccolini, Korica, & Ruddle, 2015).

The mapping of social intelligence competencies and the identified digital leadership practices yielded five categories of practices that we introduce now in more detail.

3.3.1 Communicate

The keyword "communicate" was the most recurrent keyword in the frequency count analysis based on the small-scale survey, and one of the most important categories of effective digital leadership behaviors (Kayworth and Leidner, 2002). It comprises the following digital leadership practices.

(C1) Building group pride. One of the social intelligence facets is articulating a compelling vision and building group pride (Goleman and Boyatzis 2002; Zigurs 2003; Zaccaro and Bader 2003). An example on how to achieve group pride is noting the team's success on electronic bulletin boards and highlighting the individual's input in achieving the team's goals (Zaccaro and Bader 2003).

(C2) Communicating and responding promptly, predictably and frequently. Studies showed that frequent communication between team members, including the leader, and communicating digitally in an enthusiastic and proactive manner positively impacts teamwork (Zigurs 2003; Zaccaro and Bader 2003). Prompt, predictable and frequent communication is highly correlated with high levels of trust (Kayworth and Leidner 2002; Jarvenpaa and Leidner, 1998).

(C3) Persuading, engaging, or summarizing in writing. Persuasion and engagement are socially intelligent traits (Goleman and Boyatzis, 2008). In digital communication, leaders can now take the role of authors, which can broaden their communicative strategies as well as influence (Richter and Wagner, 2014). One example about how to engage in writing is sending messages that convey enthusiasm and support (Zaccaro and Bader, 2003).

(C4) Providing constructive feedback. Two of the dimensions of social intelligence refer to the leaders' ability to provide constructive feedback, highlighting that the delivery of the feedback is more important than the feedback itself. Effective digital leaders address setbacks in a supportive manner and they provide guidance and suggestions (Zaccaro and Bader 2003; Kayworth and Leidner 2002).

(C5) Signaling Roles and Responsibilities. Signaling roles and responsibilities is an important aspect of digital leadership, and it can be done by explicitly communicating who does what and when. (Zaccaro and Bader, 2003; Kayworth and Leidner, 2002; Zigurs, 2003; Richter and Wagner, 2014).

(C6) Conveying enthusiasm. Jarvenpaa and Leidner (1998) discuss the importance of conveying enthusiasm through digital communication, through crafting messages that suggest enthusiasm, optimism, and support. An upbeat environment, supported by enthusiastic communication, has a positive impact on efficiency, decision-making, and creativity (Goleman, Boyatzis, and McKee, 2013).

3.3.2 Adapt

One of the big code clusters related to tasks and responsibilities of leaders suggest behavioral complexity (Kayworth and Leidner, 2002) as an important category of digital leadership practices. This reflects the ability of a digital leader to adapt to multiple roles, technology, and cultures.

(A1) Appropriating and embracing technology. The leader's adaptation of technology will dictate whether technology will be appropriated and have a contribution to the performance of the organization (Avolio, Kahai, and Dodge, 2000). Zigurs (2003) sustains that adapting technology is part of a leader's responsibility, while Kayworth and Leidner (2002) find that digital leaders sometimes have to take the role of teaching team member about how to use technology.

(A2) Alleviating technical uncertainties. Technical uncertainties can hinder trust in digital teams. To alleviate technical uncertainties, it is recommended to implement explicit communication practices, for example informing about team member's availability and having a phlegmatic reaction to technical turbulence (Jarvenpaa and Leidner, 1998).

(A3) Appreciating and addressing the culture and values of the group or organization. One of the social intelligence dimensions is appreciating the culture and values of groups or organization (Goleman and Boyatzis, 2008). Digital communication can lead to further misunderstandings, and it is

a leader's role to establish communication standards that can reduce misinterpretations (Kayworth and Leidner, 2002; Zigurs, 2003).

(A4) Assuming multiple leadership roles flexibly. It is important that a digital leader is able to perform multiple leadership roles simultaneously, ranging from task-focused or team-building roles, to enablers of self-fulfilment (Zigurs, 2003; Zaccaro and Bader, 2003; Kayworth and Leidner , 2002; Richter and Wagner, 2014).

(A5) Building a sense of personal presence online. In digital teams, frequent communication is more important than in traditional teams, and digital leaders can take advantage of the vividness and interactivity of digital media to build a sense of presence online (Zigurs, 2003). This can be done by using blog posts, microblogging platforms, or corporate wikis and discussions to build a sense of presence, enabling employees to feel connected to their digital leader. (Richter and Wagner, 2014; Nicolini, Korica, and Ruddle, 2015)

3.3.3 Listen

One of the social intelligence aspects is the ability to listen attentively and think about what others feel (Goleman and Boyatzis, 2008). In one study, employees referred to effective digital leaders as someone who is hearing their suggestions (Kayworth and Leidner, 2002).

(L1) Reading online communication attentively. A trust-building behaviors of digital leaders was reading and evaluating team members contributions to assignments thoroughly (Jarvenpaa and Leidner, 1998). For example, digital leaders can provide feedback on the materials the team members send through and thus demonstrate to team members that their suggestions are heard, by directing and advising them (Kayworth and Leidner, 2002).

(L2) Soliciting input. Two aspects of social intelligence refer to asking for input: soliciting input from team members and receiving support from key people (Goleman and Boyatzis, 2008). In this context, it is important for leaders to expand their input sources to include employees that can provide different views, as opposed to the tendency of leaders to rely on the same conversational peers (Nicolini, Korica and Ruddle 2015).

(L3) Listening and react to online discussions. New communication channels, most prominently social media, provide high visibility and open participation from all hierarchical levels (e.g. Baptista et al. 2017; Richter and Wagner, 2014; McAfee, 2006; Haefliger et al., 2011). Features like reviewability allow digital leaders to listen to online discussions, scrutinize, and react to it accordingly (Richter 2017).

3.3.4 Understand

This category is based on the social intelligence dimensions 'understanding' (Goleman and Boyatzis, 2008), one of the most recurring words in the survey related to challenges: "understand"; as well as one of the most discussed criterion of effective leadership in Kayworth and Leidner's (2002) study.

(U1) Understanding and address employees' motivation. Socially intelligent leaders understand what motivates employees and motivation is presented as an important dimension of social intelligence (Goleman and Boyatzis, 2008).

(U2) Understanding physical and digital social networks and recognize their unspoken norms. A social intelligence dimension is understanding social networks and their unspoken norms (Goleman and Boyatzis, 2008). As digital communication allows for enterprise social networks to be created, it is important for digital leaders to understand the purpose and norms of the groups that their employees are creating online (Richter and Wagner, 2014; Riemer et al., 2012).

(U3) Exploring and understanding technical needs of your employees. Being sensitive to others' needs is a social intelligence aspect (Goleman and Boyatzis, 2008). An understanding of technical needs from a social intelligence perspective, is, for example, understanding the differences in proficiency in using digital communication technology (Kayworth and Leidner, 2002), what types of tools are prefered by employees and why (Steinhueser et al., 2017), or the need for employees to be able to adapt the tools to their needs (Zigurs, 2003).

(U4) Understanding and reflecting on challenges and opportunities of digital communication. Most scholars interrogated during literature review discuss the challenges and opportunities of digital communication, for example, digital communication allows for wider participation and dialogues, but that this also increases the difficulty to manage as the participation increases. (Huang et al., 2015)

3.3.5 Empathize

Goleman and Boyatzis (2008) highlight empathy as an important facet of social intelligence.

(E1) Empathising with needs and feelings of employees. One of the digital leader responsibilities is to make sure that the cognitive, social, and material needs of employees are met, in order for them to achieve their goals (Zaccaro and Bader, 2003), which can be identified by being attuned to others' mood, or being sensitive to others' needs (Goleman and Boyatzis, 2008).

(E2) Being sensitive to team members schedules. One important aspect of effective leaders is being sensitive to schedules of team members (Kayworth and Leidner (2002).

(E3) Appreciating opinions and suggestions. Reading and thoroughly evaluating team members' contributions, as well as being appreciative of team members' opinions and suggestions have been identified as effective and trust building behaviors (Jarvenpaa and Leidner, 1998; Kayworth and Leidner, 2002).

(E4) Exhibiting care and concern. Digital leaders perceived to be highly effective exhibited care, concern, and understanding towards team members (Kayworth and Leidner, 2002).

4 Empirical Refinement

4.1 Focus group

In order to assess, illustrate, and refine the framework, we continued our research process with investigating practitioner experiences and views. The focus group was designed in a format where participants would spend time individually to reflect upon the categories of the tentative framework and compare them with their established individual experiences in order to reconsider their current practices and identifying new approaches to digital leadership.

4.1.1 Communicate (C)

In reflecting on their work context, the participants noted the importance of communication-related practices. For example, in the context of working together with a team located on another continent, it was found relevant to communicate and emphasize time differences explicitly, as indicated in this quote: "listen, we have a time difference, we will always communicate a response within one day". At the same time, the other team would expect to receive an answer to their communication, alluding to the framework element of predictable communication (C2). The managers contributed to the framework by expressing the need to work on their "kindness factor", for example by "wrapping all my emails in (...) niceties", even though "we don't have (niceties) as a natural part of our (...) language (...), but [they] are part of the English culture, French culture, and definitely part of Ukrainian culture." (Interviewee 5, I5) This quote suggests the addition of 'kindnesses to our category 6 (C6) and also supports the need to adapt to other cultures (A3). The same person explained how due to his technical background, his communication is "very hard technical but it also means that my communication (is...) not very understanding and quite a wealth of explanation when I talk to people that are not in the area" (I5).

4.1.2 Adapt (A)

Within the category Adapt, participants were prioritizing creativity, mapping, and adapting to cultural differences, using employees' prefered technology, and to be more present online. One of the interviewees considered that prioritizing creativity in her team, would lead to her employees coping better with technical uncertainties (A2) and with adapting technology (A1). Another interviewee also discussed the notion of creativity and how, despite adapting technology, he still leaves space for employees to find their own way of using technology: "we still allow teams to explore their

possibilities because we don't want to kill the creativity. And we don't want to, you know, burn that up, by setting a set-up of rules and structures around it" (I8). Creativity was also mentioned by a third manager, who stated that he will "lead and develop a structure for creativity" across the organization. These comments suggested the addition of creativity to the Adapt dimension, in form of (A6) Prioritizing creativity.

Another respondent reported that she will hold a new workshop for her employees to re-introduce the tools that employees would benefit from using, but didn't adopt until now due to technology performance, alluding to (A1). Another interviewee pointed out the cultural differences (A3) that lead to different communication and the importance of a digital leader to adapt to these communication differences: "For example when I send out an email, the entire team in India there is this politeness so they all send me an email back saying 'Noted madam'. Okay, so let's move this process to Slack and there you can give me a little thumb up." (A3).

Furthermore, the participants discussed how, depending on the culture, a leader might embrace different roles depending on employees' culture, as one interviewee points out: "if it is normal to confide in your boss, then we need to accept that that's actually the social norm there, and that's just how it is and we need to embrace the culture we are working in."Another interviewee gives yet another example and agrees with the previous statement: " My boss is a male, he's 20 years younger than me and he hugs me, so what the heck, when I go to France (...) I would have to kiss everybody, even the service guy." (I9) Talking about adapting to performing multiple leadership roles simultaneously (A4), one individual stated that "we can agree on it, on general values as a team, there are also individual traits, some need a leader who is more bossy", pointing out that performing multiple roles as a leader is not only in relation to the situation or the type of culture, but it can also vary from one individual to another. In one case, an interviewee alluded to the notion of building a sense of presence online (A5), and she has reflected upon how the team in San Francisco has a different video conferencing tool that they are using, therefore she will adapt their technology and communicate to them via their preferred platform: "so forget Skype, forget features on Slack, Zoom is the tool for them" (I4). Furthermore, she has concluded that "I would benefit more if I was more visible online even more than I am".

4.1.3 Listen (L)

One of the interviewees talked about how she will solicit input (L2) from her team by discussing different aspects of digital leadership to see if the employees would think about the same dimensions as she does: "see if it's the same with what other people in my team thought about" (I10).

4.1.4 Understand (U)

The Understand dimension sparked discussions about work practices such as: understanding motivation, understanding the different technical needs of employees,

An interviewee pointed out that understanding motivation (U1) can help overcome differences in work practices and tools usage: "Finding the motivation within the teams and within the management and within the individual to actually overcome these things. And that is (...) the key for solving (differences in what technology employees prefer to use)." He later expressed that when he returns to work, he will work on understanding motivation and why employees "act how they act and perform how they are performing, that's part of what I would like to work on when I go back".

Several interviewees discussed about understanding the technical needs of employees (U3). In one case, a leader reports that employees were hindered to use digital communication tools due to computers' performance, and for that reason she will re-introduce the tools after the employees are provided with better computers: "Unfortunately we started by buying some computers that are really slow and that didn't help them adopt technology - it's been a challenge to use the computers, so now for this school we bought new computers that are faster, so when I go there next time we'll do a workshop where we reintroduce the tools" (I7).

Another interviewee describes the process of going from multiple different communication tools, to company-wide standards and process, while understanding the different technical needs of employees (U3): "we still allow teams to collaborate the way they want, but whenever it comes to something that

is corporate side we have one tool to do that in. And we still have a lot of tools to communicate through to use it individually, but company-wide we have set of processes and this is how we do it." (I4). Another interviewee (I2) discussed about understanding the opportunities and challenges of digital tools (U4) and planning a workshop for employees to discuss different aspect of digital communication. Another informant addresses the scalability of his communication "not say things over and over, but be scalable", alluding to (U4) and the need of that particular manager to better understand the opportunities of digital communication.

4.1.5 Empathize (E)

One interviewee alluded to the notions of empathizing with the needs and feelings of employees (E1): "Empathize with the team in the US, who feels they are not part of the headquarters and find ways to make them feel part of 'this is us'" (I3). Another interviewee pointed out that although the company invested a significant amount of money in buying video-conferencing tools, the employees did not adopt these tools and relied on other tools: "Most of the users are afraid to go 'cos they break something (...) people are just like: 'it is big, I don't know how it works'" (I11). His observation was in line with the notion of empathizing with team members' problems, as well as the needs and feelings of the employees (E1). Multiple interviewees reflected upon the notion of being sensitive to team members schedules and pointed out that they will keep that in mind when they communicate and interact (E2).

4.2 Illustrative case study

One month after the group meeting, we investigated one selected case context of digital leadership in more detail. The case organization is a global pharma company ('Pharm'), that develops products in the context of allergy treatment, with headquarters in Europe and more than 3000 employees. We studied the work context of the digital leader 'Sandra', who was also a participant in the focus group. Her leadership activity is marked by the requirement to work with groups across multiple locations. She states that her motivation to be part of this research is her challenges in relation to being a leader, such as implementing new ideas, and her focus on designing and implementing new ways of working. Sandra was asked again to reflect on the viability and impact of the discussed practices of digital leadership.

4.2.1 Communicate (C)

Relating to communication approaches, Sandra exemplified the practice of explicitly 'building group pride' (C1): "we (...)make them feel more part of the (...) family. And then also highlight more: 'Yeah, this is really important system. If this system does not work, then the company doesn't work'". To attain and improve 'prompt, predictable, and frequent communication' (C2), Sandra explicitly told people to pick up the phone if they have something important, who were surprised that they can "just" consider that: "if there is anything, you can just contact us directly. Then they already feel like ''No, no, no I can just first try to solve it myself''.

In the context of the practice 'Persuade, engage, or summarizing in writing' (C3), Sandra and her team use a ticketing system as a means to communicate. She made explicit what type of tone of voice her team can have in the system: "Because when you write documents in our document management system, that goes to the inspector. So you can have a nice tone, you can be friendly, but it has to be very professional. And then in the ticket system, I mean, don't ask ''oh hey, how is your son doing'', but you can be a bit more relaxed."

To address the practice of 'packaging their email communication in niceties', the leader discussed a plan to "use these extra 20 seconds to write 'Hi, (...) how are you' and at the end 'have a nice day', anything like that." The leader finally noted an improved tone and positivity in the group even though they use a ticket system. So, people do not realize sometimes that they are communicating with people that are behind this. And we are trying to make it more like we are, like there's a person sitting behind it."

4.2.2 Adapt (A)

Sandra also illustrated the need for leaders to "appreciate and address the culture and values of the group or organization" (A3), when she reflected that negative impact of assuming a certain type of communication based on the country of origin: "he is from Italy, and he's been working with Madrid and France, and then I said 'oh that's brilliant, because then you can sort of update us on the culture in there'. And then he said 'I actually have 10 years experience working in the US'. And then I thought, okay, so you can sometimes be wrong actually". In the context of adopting multiple leadership roles simultaneously (A4), the leader has encouraged the team to have more than one "attitude": "We have multiple roles. The one is, we are a coach and a helper on how to use the system. So if they don't understand how it works, we sort of coach them. If they use the system in a way they should not, we are a police agent, saying 'you cannot use the system as that'. If they are not that interested in using the system, or supporting the system, we are motivator.'' Building a sense of presence online (A5) was exemplified by the leader as having a "green" status so that even though they are late in answering tickets, people do know that they can always contact Sandra and her team: "And we found out that, (...) building a sense of presence online, that that actually is important. And that we should do something about that."

4.2.3 Understand (U)

Sandra talked about how not everyone is familiar in the same way with digital communication, which is something that she thinks people could be better at adapting to, while her and her team can be better at understanding that this is the case, alluding to (U3): "A lot of people are working where we are working. They have experience with working online. But other people are still a bit, yeah, they are not familiar with working with this and how to do this."

Sandra reported that one of the challenges in digital communication (U4) is that "tone of voice gets lost when answering tickets" and therefore she has made her team aware of communication styles. Lastly, Sandra discussed about her intention to present the digital leadership practice framework in more meetings, while the ideal exposure to the framework, in her opinion, would be one hour every week, for 5 consecutive weeks, as "And I think now because there hasn't been so much focus on it in our team, or in our whole department (...) There was a lot to discuss and it was a lot to improve on."

5 Discussion

Based on an extensive framework refinement process, we can now address our research objective of identifying digital leadership practices from the perspective of social intelligence. We begin with discussing relevant aspects of our theory development process and then present the resulting refined framework.

In our exploration of the literature, we noted that research relating to digital leadership is very fragmented. The different disciplines that digital leadership is touching upon address different facets, but so far, no individual research field embraced the interdisciplinary nature of the subject. For example, the emotional or social intelligence aspect of leadership is not touched upon in the IS perspective of leadership, but the emotional and social intelligence aspects are also lacking the digital communication technology perspective. Further, neuroscientific and neurobiological discoveries have not been previously connected with the field of digital leadership.

The different incommensurable and partial approaches and backgrounds lead to challenges in outlining a coherent discourse of past research. For example, in regards to leadership mediated by technology, different terminologies could be found, such as Virtual Leadership (Zigurs, 2002), or E-leadership (Avolio, Kahai, and Dodge, 2000). At the same time this outcome of the literature review substantiates the relevance of achieving a more integrated framework. Against this backdrop and further motivated by our exploratory practitioner survey, we find that the concept of social intelligence emerges as a promising perspective that blends emotional intelligence, psychology, neuroscience, and neurobiology, and that is further very synergistic with previous information systems contributions that relate to digital leadership. In this article, we contribute by utilizing and leveraging this social intelligence perspective as a means to develop a more integrated framework of digital leadership practices that can also serve to guide and synthesize future research. Based on the

blending of social intelligence and digital leadership research, our multi-methods approach yielded the final framework of digital leadership practices, shown in Table 1.

Communicate	(C1) Building group pride (C2) Communicating and responding promptly, predictably and frequently (C3) Persuading, engaging, or summarizing in writing (C4) Providing constructive feedback (C5) Signalling roles and responsibilities (C6) Conveying enthusiasm and kindness
Adapt	(A1) Appropriating and embracing technology (A2) Alleviating technical uncertainties (A3) Appreciating and addressing the culture and values of the group or organization (A4) Assuming multiple leadership roles flexibly (A5) Building a sense of personal presence online (A6) Prioritize creativity
Listen	(L1) Reading online communication attentively (L2) Soliciting input (L3) Listening and react to online discussions
Understand	(U1) Understanding and addressing employees' motivation (U2) Understanding physical and digital social networks and recognizing their unspoken norms (U3) Exploring and understanding technical needs of your employees (U4) Understanding and reflecting on challenges and opportunities of digital communication
Empathize	(E1) Empathising with needs and feelings of employees (E2) Being sensitive to team members schedules (E3) Appreciating opinions and suggestions (E4) Exhibiting care and concern

Table 1. Social Intelligence in digital leadership practices.

With regards to the main categories, it can be noted that the practices identified via the literature review and the leaders' *actual practices* (Peppard et al., 2014, Whittington, 2014), as identified from the focus group and the case study, overlap to a high degree. Furthermore, the categories and practices are proposed as overlapping practices, i.e. they are not separate but highly interdependent. This shows the complexity of attaining efficient leadership behaviors online.

The aspect of motivation was discussed at length in the focus group, as a support for one of the dimensions of social intelligence, but was not emphasized during literature review as a practice of digital leadership. Creativity was emphasized as an important practice by four of the participants to the focus group, but was not found during literature review. Kindness and politeness when communicating were brought up by both a manager that participated in the focus group and later on, by the manager who was further interviewed during the case analysis.

Once the leaders start practicing socially intelligent behaviors, their performance increases (Goleman and Boyatzis, 2008). Similarly, our framework of social intelligence in digital leadership practices is intended as a set of behaviors and practices, that digital leaders can become aware of and exercise. The case analysis after the focus group round provided a first indication that a focused awareness on the proposed categories actually enabled the manager to improve their digital leadership behavior.

Before we conclude, we want to discuss our study in the light of several limitations. First, since digital leadership proved to be an interdisciplinary field, it was difficult to bring the different bodies of knowledge together, and this may have restricted our ability to find the most relevant studies for each of the bodies of knowledge. Second, in order to maintain the level of familiarity for an IS reader, we have limited the addition of studies related to the backbone bodies of knowledge that social intelligence is built upon, such as neuroscience and neurobiology. Further studies should seek to

unpack these fields and inquire into which of the recent discoveries can benefit to digital leadership practices and how. Concurrently, our data collection and analysis also had several limitations. The most predominant limitation is the number of participants to follow up with after the focus group. Although we conducted more in-depth interviews and all were supporting the framework, we only presented one illustrative case study due to the space restrictions of this paper. Further studies should seek to measure the impact of digital leaders exercising socially intelligent behaviors on several case studies over a longer time span.

6 Conclusion

In this article, we used a mixed method approach to attain the research objective of identifying socially intelligent practices that leaders can exercise in their increasingly digital work environment. Although the practices and categories included in the framework may also describe socially intelligent leaders in face-to-face environments, the difference is in the leaders' ability to project socially intelligent practices when leading via digital communication, as implementing digital work leads to a new set of challenges and opportunities.

On a broader level, our research offers an avenue to reduce the fragmentation of existing digital leadership research by offering a coherent framework of practices that grounds in a single theoretical conceptualization. At the same time, our research shows ways to link the relevant subject of social intelligence into the digital leadership context. This can enable future research that reflects on the applicability of neuroscience and neurobiology in digital leadership.

Under the social intelligence perspective, which builds on the recent discovery that our brains are in fact plastic and we can acquire new behaviors by exercising them, digital leaders can now become aware of the socially intelligent behaviors they wish to implement and exercise them in order to become socially intelligent digital leaders.

The framework can help to achieve a more consistent way to communicate important aspects of digital leadership to practitioners, but it can also facilitate future IS research on this relevant subject. The framework is proposed as a first overview of categories that can be further investigated. For example, future research can further investigate the category 'Listen' via the tentative research question "What does it mean to listen as a digital leader?".

References

Aral, S., Dellarocas, C., and Godes, D. (2013). Introduction to the Special Issue—Social Media and Business Transformation: A Framework for Research. *Information Systems Research*, *24*(1), 3–13. http://doi.org/10.1287/isre.1120.0470

Avolio, B. J., Kahai, S., and Dodge, G. E. (2000). E-leadership. *The Leadership Quarterly*, *11*(4), 615–668. http://doi.org/10.1016/s1048-9843(00)00062-x

Baptista, J., Wilson, A. D., Galliers, R. D., and Bynghall, S. (2017). Social Media and the Emergence of Reflexiveness as a New Capability for Open Strategy. *Long Range Planning*, *50*(3), 322–336. http://doi.org/10.1016/j.lrp.2016.07.005

Brocke, J. V., Simons, A., Niehaves, B., Niehaves, B., and Riemer, K. (2009). Reconstructing the giant: On the importance of rigour in documenting the literature search process. *Association for Information Systems. AIS Electronic Library (AISeL)*.

Barley, S. R., and Kunda, G. (2001). Bringing Work Back In. *Organization Science*, *12*(1), 76–95. http://doi.org/10.1287/orsc.12.1.76.10122

Bharadwaj, A., Sawy, O. A. E., Pavlou, P. A., and Venkatraman, N. (2013). Visions and Voices on Emerging Challenges in Digital Business Strategy. *MIS Quarterly*, *37*(2), 633–661. http://doi.org/10.25300/misq/2013/37.2.14

Camerer, C., Loewenstein, G., and Prelec, D. (2005). Neuroeconomics: How Neuroscience Can Inform Economics. *Journal of Economic Literature*, *43*(1), 9–64. http://doi.org/10.1257/0022051053737843

Camerer, C. F., Loewenstein, G., and Prelec, D. (2004). Neuroeconomics: Why Economics Needs Brains. *Scandinavian Journal of Economics*, *106*(3), 555–579. http://doi.org/10.1111/j.0347-0520.2004.00377.x

Cascio, W. F., and Shurygailo, S. (2003). E-Leadership and Virtual Teams. *Organizational Dynamics*, *31*(4), 362–376. http://doi.org/10.1016/s0090-2616(02)00130-4

Flick, U. (2014). The SAGE Handbook of Qualitative Data Analysis. http://doi.org/10.4135/9781446282243

Glimcher, P. (2008). Neuroeconomics. *Scholarpedia*, *3*(10), 1759. http://doi.org/10.4249/scholarpedia.1759

Goleman, D., Boyatzis, R., and Mckee, A. (2009). Primal Leadership: The Hidden Driver of Great Performance. *Discovering Leadership*, 63–72. http://doi.org/10.1007/978-1-137-24203-7_6

Huang, J., Baptista, J., and Newell, S. (2015). Communicational ambidexterity as a new capability to manage social media communication within organizations. *The Journal of Strategic Information Systems*, *24*(2), 49–64. http://doi.org/10.1016/j.jsis.2015.03.002

Jarvenpaa, S. L., and Leidner, D. E. (1998). Communication and Trust in Global Virtual Teams. *Journal of Computer-Mediated Communication*, 3: 0. doi:10.1111/j.1083-6101.1998.tb00080.x

Kahai, S.S. (2013) Leading in a Digital Age: What's Different, Issues Raised, and What We Know. *In M.C.* Bligh and R.E. Riggio, eds., Exploring Distance in Leader-Follower Relationships: When Near is Far and Far is Near. Routledge, 2012, 63-108.

Kayworth, T. R., and Leidner, D. E. (2002). Leadership Effectiveness in Global Virtual Teams. *Journal of Management Information Systems*, *18*(3), 7–40. http://doi.org/10.1080/07421222.2002.11045697

Kolb, B., and Whishaw, I. Q. (1998). Brain Plasticity and Behavior. *Annual Review of Psychology*, *49*(1), 43–64. http://doi.org/10.1146/annurev.psych.49.1.43

Kotter, J.P. (1996) Leading Change. *Harvard Business School Press.*

Nicolini, D., Korica, M., and Ruddle, K. (2015). Staying in the know. *MIT Sloan Management Review, 56(4),* 56-65.

McAfee, A. 2006. Enterprise 2.0: The Dawn of Emergent Collaboration. *MIT Sloan Management Review,* 47, 21.

Mintzberg, H. (1980). *The nature of managerial work*. Prentice-Hall.

Morton, D. (2001). JoAnne Yates and John Van Maanen, eds. Information Technology and Organizational Transformation: History, Rhetoric, and Practice. Thousand Oaks, Calif.: Sage Publications, 2001. xvi 367 pp. ISBN 0-7619-2301-2, $59.95. *Enterprise and Society*, *2*(4), 811–813. http://doi.org/10.1093/es/2.4.811

Peppard, J., Galliers, R., Thorogood, A. (2014). Information systems strategy as practice: Micro strategy and strategizing for IS. *Journal of Strategic Information Systems.* http://dx.doi.org/10.1016/j.jsis.2014.01.002

Richter, A. (2017). Two sides of the same coin? - The effects of hierarchy inside and outside enterprise social networks. *Thirty eight International Conference of Information Systems, Seoul 2017*

Richter, A., and Wagner, D. (2014). Leadership 2.0: Engaging and Supporting Leaders in the Transition towards a Networked Organization. *2014 47th Hawaii International Conference on System Sciences*. http://doi.org/10.1109/hicss.2014.78

Riemer, K.; Overfeld; P., Scifleet, P.; Richter, A. (2012): Eliciting the anatomy of technology Appropriation Processes: A Case Study in enterprise social media. 20th European Conference on Information Systems, Barcelona

Saldana, J., 2009. The Coding Manual for Qualitative Researchers. *SAGE Publications.*

Schultze, U., and Avital, M. (2011). Designing interviews to generate rich data for information systems research. *Information and Organization*, *21*(1), 1–16. http://doi.org/10.1016/j.infoandorg.2010.11.001

Steinhueser, M., Waizenegger, L., Vodanovich, S., Richter, A., (2017). Knowledge management without management - Shadow IT in knowledge-intensive manufacturing practices. *Twenty-Fifth European Conference on Information Systems (ECIS), Guimarães, Portugal, 2017*

Stott, K., and Walker, A. (1995). *Teams, teamwork and teambuilding: the manager's complete guide to teams in organisations*. Prentice Hall.

Turco, C.J., 2016. A New Era of Corporate Conversation. *MIT Sloan Management Review, 58(1), pp.11-12.*

Whittington, R. (2014) Information Systems Strategy and Strategy-as-Practice: A joint agenda. Journal of Strategic Information Systems http://dx.doi.org/10.1016/j.jsis.2014.01.003

Yates, J. and Maanen, J.V. (2001) Information Technology and Organizational Transformation: History, Rhetoric and Preface. *Sage Publications*.

Zaccaro, S. J., and Bader, P. (2003). E-Leadership and the Challenges of Leading E-Teams: *Organizational Dynamics*, *31*(4), 377–387. http://doi.org/10.1016/s0090-2616(02)00129-8

Zaccaro, S. J., Gilbert, J. A., Thor, K. K., and Mumford, M. D. (1991). Leadership and social intelligence: Linking social perspectiveness and behavioral flexibility to leader effectiveness. *The Leadership Quarterly*, *2*(4), 317–342. http://doi.org/10.1016/1048-9843(91)90018-w

Zaccaro, S. J. (2007). Trait-based perspectives of leadership. *American Psychologist*, *62*(1), 6–16. http://doi.org/10.1037/0003-066x.62.1.6

Zammuto, R. F., Griffith, T. L., Majchrzak, A., Dougherty, D. J., and Faraj, S. (2007). Information Technology and the Changing Fabric of Organization. *Organization Science*, *18*(5), 749–762. http://doi.org/10.1287/orsc.1070.0307

Zigurs, I. (2003). Leadership in Virtual Teams: *Organizational Dynamics*, *31*(4), 339–351. http://doi.org/10.1016/s0090-2616(02)00132-8